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ABSTRACT

Beginning with the fall 1983 semester, a set of behavioristic principles was incorporated into the classroom management techniques used in the high school completion and general educational development (GED) programs offered at the South Dade Adult Education Center in Homestead, Florida. A study examined the effectiveness of these principles in reducing the student attrition rate by comparing course withdrawal data on 102 students who had participated in the GED program before the behaviorist techniques were instituted with data on 116 students who enrolled in the program in three different quarters after the new classroom management principles were in place. The student withdrawal rate for the 1982-1983 school year (before the new behavioristic approach was adopted) was 36 percent. After the new approach was instituted, the withdrawal rate decreased to 21 percent, thereby attaining a full 15 percent reduction of the previous year's rate. The change in classroom management techniques was determined to have yet another favorable outcome. Students attending classes in which the new principles were used actually recruited new students for the following term. It was concluded that the new behaviorist principles were effective because they helped students perceive themselves as part of a group (the principle of operant reinforcement through social facilitation), increased students' desire to excel by providing them with positive feedback on a regular basis, and reduced students' test-taking anxieties (through application of principles of extinction). (MN)

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ESTABLISHING THE RELATIONSHIP BETWEEN WITHDRAWALS AND APPLICATION OF BEHAVIORISTIC PRINCIPLES IN ADULT EDUCATION CLASSES

by

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ABSTRACT

The South Dade Adult Education Center, located in Homestead, Florida, is one of 24 adult education centers in Dade County that offer high school completion and general education development (GED) courses. Continued funding depends on numbers of students enrolled, and student retention is of upmost importance. It was the purpose of this study to determine if student retention/withdrawal was related to or independent of the application of behavioristic principles to classroom management. Principles used were operant reinforcement through social facilitation, schedules of reinforcement, and principles of extinction to reduce test-taking anxieties.

Data was taken from roll books during six consecutive terms. The results showed that the withdrawal rate during the three terms during which the above-mentioned behavioristic principles were applied, was 15% lower than during the other three terms. Che Chi Square (X^2) Test of Independence was used to determine if there was a significant relationship between withdrawals and classroom management. Results showed that such a significant relationship existed. It was recommended that new teachers in adult education, and teachers who were experiencing high withdrawal rates familiarize themselves with behavioristic techniques.

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INTRODUCTION

The South Dade Adult Education Center is one of 24 adult education centers in the Dade County Public School System that offer high school completion and general education development (GED) classes. Located in rural Homestead, the student population consists of farm workers, nursery employees, small business managers/owners/employees, military dependents, persons who commute to Miami for daily work, and homekeepers. Ethnic groups represented are Mexican, Haitian, Cuban, Vietnamese, Chinese, Europeans, American Blacks and American Whites.

Students at the center have common goals: to further their education, improve their economic condition and to learn about their community. Those enrolled in high school completion and GED courses lack the education necessary to obtain better employment. Previous failure in educational pursuits and/or unfamiliarity with the American school system render many of these students uncertain and anxious, thus withdrawing from classes before success could be achieved. It was the purpose of this study to determine if the application of behavioristic principles to classroom management would retain more students and lead them to course completion and success.

Students, entering the U.S. Government classroom on the first day of the term, were given a 3 x 5 card and asked to list name, address, telephone number, social security

number, emergency contact person and telephone number. They were also asked to note whether they were strictly evening students, or if they were day students taking additional credit to make up for time lost in their day programs. These cards were collected upon completion. The purpose for this information was explained to the students as follows: after the second absence, the teacher and/or a classmate would telephone the student to find out why he or she had been absent, to let the student know what class work needed to be studied, and to facilitate transportation, should that have been the reason for the absence. If the student could not be reached, the emergency contact person would be called. If no telephone number was available, the teacher would write a note to the address given, or a classmate would visit the student's home. The explanation resulted in students exchanging addresses, telephone numbers, directions and existing transportation problems. The behavior elicited was mutual support to assure regular attendance and updated class work.

Once approximately 20 students had arrived and completed the cards, they were asked to sit in groups of four. Late entering students were assigned to the various groups. They were then asked to learn about each other to be able to make introductions to the class. They were also advised that they would be working closely with each other in these groups for the remainder of the term. Since adults do come with a great variety of experiences, this meeting session

always proved to be enlightening for all participants. Social facilitation was initiated. Immediately thereafter, the teacher announced that all students would pass the class if they adhered to the rules and requirements that were written on the blackboard for the students to copy. (Appendix A) After some initial resentment, most students agreed that the requirements were reasonable and that the assurance of passing the class with a good grade was comforting. Stress was reduced since students knew what was expected of them throughout the term.

During the second class meeting, test-taking techniques were explained and a short multiple-choice test was given for the purpose of reducing anxieties and to practice breathing exercises. Students were asked to stand up and to breathe deeply repeatedly. This elicited the response that students likened the exercise to a sports class and relaxed, commenting on the combination of sports and government. When the first subject-related test was administered, students participated in the breathing exercises once at the beginning of the test, and twice during the test. During subsequent tests, participation in these exercises became an individual activity. There was no admitted anxious student by the time the final exam was administered.

Tests, given after every third class meeting, were regarded as self-check instruments. Tests were administered during the first hour of the class, graded during the break, and

returned immediately after the break. Grading of test papers was positive. The teacher noted the number of correct responses as grade and commented on the student's improvement. Upon return of the corrected answer sheets, test questions were discussed, and students learned which parts/points of the chapters were more important than others, and how much more time was necessary to devote to study. After the second test, all scores improved, and usually more that half of the class returned 100% correct responses. Such schedules of reinforcement in regular intervals with emphasis on correct responses and continuous improvement increased interest, and improved study habits and participation.

Groups became teams, helping each other and encouraging study. A dictionary was always available, and groups who experienced difficulties writing their outlines, asked the teacher for assistance. Since the groups were required to discuss the texts read and to relate them to their own experiences, intellectual challenge was elicited. Students commented they were learning that they were an intrical part of their government. After completion of the assigned work, they socialized until it was time for the break. Upon return to the classroom, the outlines were dictated to the teacher to be written on the blackboard. Questions from other students or the teacher were answered by any group member.

Background and Significance

Retention of students is of upmost importance to adult education classes that receive funding on the basis of numbers of students enrolled. It was the purpose of this study to determine if the application of behavioristic principles to classroom management was independent of or related to the number of withdrawals in adult high school and general education development classes.

The withdrawal rate at the South Dade Adult Education Center in the adult high school and GED classes was approximately 35% during the fall and spring terms and slightly higher during the summer terms. Teaching methods, presentation of materials and classroom management influence withdrawal/ retention rates, and thus maintenance of student enrollment become the responsibility of the teacher. It was the purpose of this study to provide a comparison of withdrawals during three consecutive terms (one school year) of U.S. Government classes where behavioristic principles were applied, with three consecutive terms (one school year) of U.S. Government classes where an eclectic approach was used.

Research Question

The research question was as follows:

Is student withdrawal in adult high school classes related to or independent of the application of behavioristic principles to classroom management?

Hypothesis

The hypothesis was as follows:

Student withdrawal is related to the application of behavioristic principles used in classroom management during three consecutive U.S. Government classes (one school year).

Definition of Terms

For the purpose of this study, the definitions of terms were as follows:

Adult high school program: consists of courses in English, Mathematics, Natural Science, Social Science and various electives.

Behavioristic principles used for this study:

(1) Operant reinforcement through social facilitation: Students worked in groups of 6 - 8 students per group. They were given part of a chapter to read, discuss and outline. Upon completion of the assignment, students had time to socialize until break-time, encouraging speedy, concentrated work as well as regular attendance in order to remain part of the group.

(2) Schedules of reinforcement: Tests were administered after every third class meeting throughout the term. Tests were scored (use of standardized answer sheets and answer key) immediately after tests had been returned to the teacher. The immediate feed-back and frequent testing procedure enabled them to determine

their current grades as more test scores were accumulated. Missed tests were not assigned a grade or number.

(3) Principles of extinction to reduce test-taking anxieties: Multiple choice test-taking techniques were explained and exercised during the second class meeting. Breathing exercises: Test I, the entire class participated in breathing exercises before and twice during the test. Test II, the entire class participated in breathing exercises before and once during the test, and students were encouraged to repeat the exercise individually whenever necessary. Test III, the entire class participated in breathing exercises before the test, and students repeated the exercise independently whenever necessary. During the remaining tests, breathing exercises were encouraged to reduce anxiety, but not engaged in as a group activity.

General Education development (GED) program: consists of one course with emphasis on reading comprehension, grammar and mathematics. The course prepares students to take the standardized GED test that will grant them a high school diploma. Tests are administered by the adult education centers.

REVIEW OF RELATED LITERATURE

B. F. Skinner (1968) wrote that "teaching may be defined as an arrangement of contingencies of reinforcement under which

behavior changes." Since the behavior to be changed was student withdrawal behavior, reinforcement had to be designed to retain students in classes. Goldman (1981) used a group climate in which students were encouraged to study with each other and learn from each other to initiate goal setting behavior and with that decrease withdrawal rates. She noted that especially lower level students gained from the group climate since they were assisted by higher level students.

Beaudin (1982) and Lovell (1980) emphasized that students were retained when a supportive learning environment had been created in which required commitments were communicated at the beginning of the term. Thus, high levels of stress due to time pressure were reduced. According to Esler (1981), Talent and Busch (1982), Milhollan and Forisha (1972), and Geiser (1976), schedules of reinforcement were more effective and the behavior emitted was more enduring if the reinforcement was positive.

Since enrollment and attendance in adult education classes are voluntary, students should receive positive reinforcement to complete the courses. Esler found that the use of extrinsic tokens/rewards increased attendance. Geiser called this reward system bribery, since in an if...then atmosphere learning loses its excitement and intrincic rewards. Esler summarized findings in the use of positive reomfprcers/ He found that teacher praise reduced student deviancy, and the use of incentives increased the proportion

of correct responses. Extrinsic tokens increased the attendance and achievenemt of the student population observed.

Positive reinforcement can be applied through the creation of a positive environment in which peer manipulation is used. The literature revealed that peer manipulation decreased student deviancy and thus increased student cooperation, attendance and retention. Positive reinforcement was achieved through the use of student-tutor, in-group-study and peer socializationpractices (Esler, 1983; Geiser, 1976; Talent and Busch, 1982).

Darkenwald (1981) and Haponski (1983) underscored that a positive environment was one in which the student, much like a customer, got what he came for. If the student knows upon entering the classroom situation that he will learn, benefit and be satisfied, he will more likely persist than if he does not know what to expect. However, positive reinforcements such as praise and peer interaction alone are insufficient for retention if students do not experience intellecual challenge. Teaching methods, competence and performance are variables that can be examined, added and changed to create a challenge and become part of the positive reinforcement (Beal and Noel, 1980; Cramer, 1982).

This study focused on the use of operant reinforcement through social facilitation and intellectual challenge, and schedules of reinforcement that included fading to increase attendance. Principles of extinction were applied to reduce test-taking

anxieties. It was the purpose of this study to determine if the application of these behavioristic principles reduced the number of withdrawals in academic adult education classes.

PROCEDURES FOR COLLECTING AND TREATING THE DATA

For the purpose of this study, the population was defined as all students who had registered for adult high school classes and GED programs (N = 1447) at the South Dade Adult Education Center at the beginning of six terms: Fall 1982, Spring 1983, Summer 1983, Fall 1983, Spring 1984, and Summer 1984. The sample was composed of all students who had registered for U.S. Government classes (N = 218) at the beginning of the above-mentioned six terms. The control group consisted of all students (N = 102) who had registered during the first three terms, and the experimental group consisted of all students (N = 116) who had registered for the last three terms. The independent variable was the application of behavioristic principles to classroom management in the experimental group.

Withdrawal data for each of the classes was available for the six terms. The data was extracted from student attendance records kept on file at the South Dade Adult Education Center. Students who completed the classes were referred to as persisters, and students who did not complete the classes were referred to as withdrawers. Contingency tables of observed and expected frequencies were constructed.

The hypotheses were as follows:

H_o = Student withdrawal is independent of the application of behavioristic principles used in classroom management during three consecutive terms of U.S. Government classes.

H_a = Student withdrawal is related to the application of behavioristic principles used in classroom management during three consecutive U.S. Government classes.

The Chi Square (X^2) Test of Independence was used to determine if there was a significant relationship between the application of behavioristic principles to classroom management and student withdrawal or persistence. The desired level of significance was established at .05 and the degree of freedom (df) was 1. By referring to a table of the distribution of X^2 it was found that for 1 degree of freedom the critical X^2 value at a .05 level of significance is 3.84. Therefore, reject H_o and accept H_a if X^2 is 3.84 or greater.

Assumptions and Limitations of the Study

It was assumed that the sample was of a sufficient size to be representative of all students who had registered for classes in the adult high school and GED programs at the South Dade Adult Education Center for six terms. Therefore, the results of this study may be generalized to present and future populations registering for these classes at the center.

There were several limitations. Other teachers may have included behavioristic approaches in their classroom management practices. Additionally, some students may have withdrawn from classes due to work schedule changes, or because they moved out of the area. Thus, a clear-cut either - or comparison could not be established.

PRESENTATION OF RESULTS

During the 1982/83 school year, 102 students enrolled in U.S. Government classes at the South Dade Adult Education Center. Of these, 65 completed the classes and 37 withdrew (Table 1). Two different teachers taught during the three terms, and since group work on a regular basis was not initiated until the following school year, it was assumed that the teachers used an eclectic approach to teaching and classroom management. The withdrawal rate during the 82/83 school year was 36%, about the average of the general withdrawal rate reported by the center.

During the 83/84 school year, 116 students enrolled in U.S. Government classes. Ninety-two persisted and twenty-four withdres (Table 1). The withdrawal rate during this year was 21%, thus 15% lower than during the 82/83 school year. One teacher taught during the three 83/84 school terms. Group work and the application of behavioristic principles to classroom management were initiated at the beginning of the first term and repeated furing the following two terms.

Table 1

Observed frequencies of student withdrawals during two consecutive school years (1982/83 and 83/84) in U.S. Government classes.

Classification	Persisters	Withdrawers	Total
82/83 school year eclectic approach in classroom management	65	37	102
83/84 school year application of behavioristic principles to classroom management	92	24	116
Total	157	61	218

Using the Chi Square (X^2) Test of Independence to determine if there was a significant relationship between withdrawals and classroom management, the following hypothesis was tested: Student withdrawal is related to the application of behavioristic principles used in classroom management during three consecutive terms (one school year) of U.S. Government classes.

The expected frequencies during the 82/83 school year were 73.5 persisters and 28.5 withdrawers (Table 2). The expected frequencies during the 83/84 school year were 83.5 persisters and 32.5 withdrawers (Table 2). Accorging to calculations, more students were expected to withdraw during the year in which behavioristic principles were applied to classroom management.

Table 2
Expected frequencies of student withdrawals during two consecutive school years (1982/83 and 1983/84) in U.S. Government Classes.

Classification	Persisters	Withdrawers	Total
82/83 school year eclectic approach in classroom management	73.5	28.5	102
83/84 school year application of behavioristic principles to classroom management	83.5	32.5	116
Total	157	61	218

Testing the relationship between student withdrawal/persistence and the application of behavioristic principles in classroom management over a two year period it was found that the calucalted value of X^2 exceeded the critical value of X^2. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted (Table 3). Student withdrawal/persistence was related to the application of behavioristic principles used in classroom management during three consecutive terms (one school year) in U.S. Government classes.

Table 3

Testing the relationship between student withdrawal/ persistence and the application of behavioristic principles to classroom management during two consecutive school years in U.S. Government classes.

Cell	f_o	f_e	f_o-f_e	$(f_o-f_e)^2$	$\frac{(f_o-f_e)^2}{f_e}$
82/83 persisters	65	73.5	-8.5	72.25	.983
82/83 withdrawers	37	28.5	8.5	72.25	2.535
83/84 persisters	92	83.5	8.5	72.25	.865
83/84 withdrawers	24	32.5	-8.5	72.25	2.223

Calculated value of X^2= 6.606, critical value of X^2= 3.84

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

Adult students attend classes on their own free will. They are neither required to attend, nor is their grade point average lowered if they withdraw. To keep students interested and to maintain enrollment is the task of the adult education teacher. If adult students are not constantly stimulated they become bored, and either find other classes that offer stimulation or they withdraw from education completely. Since many of these students had experienced failure in K - 12 programs or were not familiar

the American school system, they expressed concern about success in adult education. It became important to foster success immediately.

The Chi Square Test of Independence showed that the use of behavioristic principles in classroom management reduced student withdrawal from the classes. Careful planning of the first class meeting of the term as well as training students in group study had been necessary. Students who were used to row seating, independent work, lecture-type lessons with some variations, occasional group work and media presentations did not accept a complete change in format immediately.

It must also be noted that the teacher followed up on all withdrawing students during the three terms in which behavioristic principles were applied. Of the 24 students who withdres, two dropped out because of absences and the refusal to write the required paper (Appendix), and one left because she could not adjust to group work. The remaining 21 students left because of changed work schedules, change of residence and childbirth.

The results of the study showed that the application of behavioristic principles to classroom management elicited desired student behavior. The withdrawal rated dropped by 15%m and all students earned passing grades. An unexpected result was that students recruited new students for the following term.

From the increased attendance during the three terms in which behavioristic principles were applied to classroom management, the following is implied: (1) When adult students see themselves as part of a group in a learning situation, attendance and participation increase: operant reinforcement through social facilitation. (2) When students receive positive feedback on a regular basis, they work harder to excel: schedules of reinforcement. (3) When test-taking anxieties are reduced, test scores are higher: application of principles of extinction to reduce test-taking anxieties. Additionally, when students know what is expected of them, they study, prepare, and produce work accordingly.

Recommendations were as follows: teachers who have neven taught adult students, or who have experienced above average withdrawals from their classes, should be familiarized with the differences between K - 12 programs and adult education. This will enable them to adjust strategies, teaching methods and classroom management practices. Group work, in which every student in stimulated and required to participate, should become an intricate part of adult education classes. Since test anxiety is great among adult students, test-taking techniques should be taught. Adult students should receive positive feedback only.

Teachers in adult education should regard their role as that of the co-learner and facilitator. Students in high school

completion classes need to learn how to extract important facts from texts, how to interpret such facts and how to find additional materials to support these facts. Students do not need to be lectured constantly, nor should they receive answers to all of their questions from the teacher. In group situations they can learn to discuss points of uncertainty and seek answers. The teacher should only direct them to the sources of the additional information. This study further implies that student behavior seems to change once it is realized that the knowledge gained comes from personal efforts.

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APPENDIX

CLASS RULES

I. Group work: groups will be assigned a chapter or part of a chapter to read, discuss its content and write an outline. The outline will be dictated to the teacher to be written on the blackboard. Any group member may be asked to answer questions posed by the teacher or other students.

II. Class notes: class notes will be part of the final grade. It is necessary to keep notebooks updated and neat. If a class is missed, it is the student's responsibility to obtain the notes from a classmate.

III. Tests: There will be tests after every third class meeting. They will be multiple choice tests of 20 questions. Tests will be taken during the second half of the first hour and returned to the students after break. The number of correct responses will appear on the top of the answer sheet. Students cannot pass or fail the tests. It is required that the number of correct responses increases with each test.

IV. Absences: Three absences per term are allowed for evening students. Day students must make up the time and make appropriate arrangements with the front office. All students, after three absences, will write a term paper. They may choose a topic, but it must be approved by the teacher. The paper will be 1/2 page long for each hour missed, typewritten and double-spaced.